

FORM PCT 1390
REV. 5/93

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NO.

KOHLER ET AL 1 PCT

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371

U.S. APPLICATION NO. (if known, see § 1.5)

10/019619

INTERNATIONAL APPLICATION NO.
PCT/DE00/01623INTERNATIONAL FILING DATE
19 MAY 2000PRIORITY DATE CLAIMED
23 JUNE 1999

TITLE OF INVENTION

RING FILTER CONSISTING OF STAR-SHAPED FOLDED FILTERING MATERIAL

APPLICANT(S) FOR DO/EO/US

Wilhelm KOHLER et al

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371 (f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(I).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau)
 - b. ☐ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)).
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has **NOT** expired.
 - d. ☐ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern other document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A **FIRST** preliminary amendment.
☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
14. ☐ A substitute specification.
- ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:

PCT/ISA/210 - Int'l. Search Report (English)
2 SHEETS OF FORMAL DRAWINGS

Applicant Claims Priority under 35 U.S.C. §119 of GERMAN Application No. 199 28 448.2, filed 23 JUNE 1999.

Applicant Claims Priority under 35 U.S.C. §120 of: PCT No. PCT/DE00/01623 filed 19 MAY 2000.

APPLICATION NO. (if known, see 37 CFR 1.5)

10/019619

INTERNATIONAL APPLICATION NO
PCT/DE00/01623ATTORNEY'S DOCKET NO
KOHLER et al 1 PCT☒ The following fees are submitted:**Basic National Fee (37 CFR 1.492(a)(1)-(5)):**

Search Report has been prepared by the EPO or JPO.....\$890.00

International preliminary examination fee paid to USPTO (37 CFR 1.482)
.....\$710.00Neither international preliminary examination fee paid (37 CFR 1.82) nor
international search fee (37 CFR 1.445(a)(2)) paid to USPTO.....\$1,040.00International preliminary examination fee paid to USPTO (37 CFR 1.482)
and all claims satisfied provisions of PCT Article 33(2)-(4).....\$100

ENTER APPROPRIATE BASIC FEE AMOUNT =

\$ 890

Surcharge of \$130.00 for furnishing the oath or declaration later than ____ 20 ____ 30
months from the earliest claimed priority date (37 CFR 1.492(e)).

Claims	Number Filed	Number Extra	Rate		
Total Claims	9 - 20 =	- 0 -	X \$18.00	\$	
Independent Claims	1 - 3 =	- 0 -	X \$84.00	\$	
Multiple dependent claim(s) (if applicable)			+ \$280.00	\$	
TOTAL OF ABOVE CALCULATIONS =				\$	
Reduction by 1/2 for Small Entity status, if applicable.				\$	
SUBTOTAL =				\$ 890	
Processing fee of \$130.00 for furnishing the English translation later than ____ 20 ____ 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				\$	
TOTAL NATIONAL FEE =				\$ 890	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +				\$ 40	
TOTAL FEES ENCLOSED =				\$ 930	
				Amount to be: refunded	\$
				charged	\$

Applicant claims Small Entity status.

- a. ☒ A check in the amount of \$ 930 to cover the above fees is enclosed.
- b. ☐ Please charge my Deposit Account No. 03-2468 in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.
- c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Deposit Account No. 03-2468. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

COLLARD & ROE, P.C.
1077 Northern Boulevard
Roslyn, New York 11576-1696
(516) 365-9802

Edward R. Freedman
Signature

Edward R. Freedman
Reg. No. 26,048

Express Mail No. EL 871 451 190 USDate of Deposit December 20, 2001

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10, on the date indicated above, and is addressed to the Box PCT, U.S. Patent and Trademark Office, P.O. Box 2327, Arlington, VA 22202.

Lisa L. Vulpis
Lisa L. Vulpis

PATENT

#4/a

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS: KOHLER ET AL 1 PCT
INT'L. APPLN. NO.: PCT/DE00/01623 FILED: 19 MAY 2000
PRIORITY NO.: 199 28 448.2 FILED: 23 JUNE 1999
FOR: RING FILTER CONSISTING OF STAR-SHAPED FOLDED
FILTERING MATERIAL

PRELIMINARY AMENDMENT

ATTN: BOX PCT
Assistant Commissioner of Patents
Washington, D.C. 20231

Dear Sir:

Preliminary to the initial Office Action, please amend the
above-identified application as follows:

IN THE SPECIFICATION:

Above line 1, please insert the following paragraph:

--CROSS REFERENCE TO RELATED APPLICATIONS

Applicants claim priority under 35 U.S.C. §119 of GERMAN
Application No. 199 28 448.2 filed on 23 JUNE 1999. Applicants
also claim priority under 35 U.S.C. §120 of PCT/DE00/01623 filed
on 19 MAY 2000. The international application under PCT article
21(2) was not published in English.--

On page 1, please delete the first paragraph, and replace
with the following:

--The invention concerns a ring filter made of star-shaped folded filtering material according to the preamble of patent claim 11.--

On page 1, please delete the fourth paragraph, and replace with the following:

--This problem is solved by the implementation of a ring filter according to the preamble according to the characterizing features of patent claim 11.--

IN THE CLAIMS:

Please cancel claims 1 to 10, and insert new claims 11 to 19 attached hereto.

IN THE ABSTRACT:


Please add an Abstract of the Disclosure on its own separate page attached hereto.

REMARKS

By this Preliminary Amendment, the application has been amended to conform with U.S. practice, the cross-reference to related applications has been inserted on page 1. Claims 1 to 10 have been deleted and new claims 11 to 19 have been inserted. In the Specification, reference to the claims has been amended. An Abstract of the Disclosure on its own separate page has been added. No new matter has been introduced. Entry of this Amendment is respectfully requested.

Respectfully submitted,
Wilhelm KOHLER ET AL 1 PCT

By:


Allison C. Collard, Reg. No. 22,532
Edward R. Freedman, Reg. No. 26,048
Attorneys for Applicant

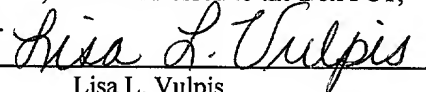
COLLARD & ROE, P.C.
1077 Northern Boulevard
Roslyn, NY 11576
(516) 365-9802

Enclosure: 1. New claims 11 to 19
 2. Abstract of the Disclosure

Express Mail No. EL 871 451 190 US

Date of Deposit December 20, 2001

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10, on the date indicated above, and is addressed to the Box PCT, U.S. Patent and Trademark Office, P.O. Box 2327, Arlington, VA 22202.


Lisa L. Vulpis

CLAIMS

11. Ring filter made of star-shaped folded filtering material and a closure molded onto one of its two front sides as a closed end disk having a plate-shaped insert, which forms a central region of the closure lying radially inside the filtering material, exclusively made of a material different from the other closure material, with a radially permeable ring frame, which extends approximately over the entire axial length of the ring filter, adjoining the filtering material radially on the inside,

characterized by the features,

- the plate-shaped insert (6) and the tubular frame (2) are fixed axially relative to one another by mutual contact,
- on its end opposite the closed end of the ring filter, the tubular frame (2) has a ring shoulder (11) which axially receives the front side of the filtering material,
- the closure material (5) is a foamed plastic.

12. Ring filter according to claim 11,

characterized in that

the closure material (5) is a polyurethane foam.

13. Ring filter according to claim 11,

characterized in that

the plate-shaped insert (6) is interlocked with the tubular frame (2).

14. Ring filter according to claim 11,

characterized by the features

- the plate-shaped insert (6) is a circular disk having an outer diameter smaller than the inner diameter of the filtering material,
- the radial outside of the plate-shaped insert (6) extends axially into the region of the filtering material (1),
- when it is connected with the tubular frame (2), the axial distance ranges of the plate-shaped insert (6) distributed around the circumference are approximately uniform relative to the tubular frame (2).

15. Ring filter according to claim 11,

characterized in that

the plate-shaped insert (6) has a ring collar (12) projecting in the direction of the tubular frame (2) radially outward relative to its position to be assumed on the tubular frame (2).

16. Ring filter according to claim 11,

characterized in that

the plate-shaped insert (6) has radially projecting fingers (14) radially outside for an axial stop on the filtering material (1).

17. Ring filter according to claim 11,

characterized in that

the fingers (14) are located in the lower floor region and have an extremely small axial dimension relative to the height of the radial outer surface of the plate-shaped insert (6).

18. Ring filter according to claim 11,

characterized in that

axial supports (10) are provided on the ring collar (12) for an axial stop on the tubular frame (2).

19. Ring filter according to claim 11,

characterized in that

the plate-shaped insert (6) is provided with radially elastic flexible tongues (8), projecting axially from this insert (6) in the direction of the tubular frame (2), to achieve an interlocking connection with the tubular frame (2), with the flexible tongues being implemented as barbs (9) on their free end for axial fixing on the tubular frame (2).

ABSTRACT

A ring filter consisting of star-shaped folded filtering material and a closure on both front sides thereof in the form of a closed end disc. Said closure has a plate-shaped insert forming the central area of the closure and located radially inside the filtering material. The insert is made of a different material from that of the rest of the closure. The invention aims at providing a ring filter than can be rationally produced and that is more resistant and durable. To this end, the ring filter is characterized by the following: a radially permeable tubular frame that extends approximately along the entire axial length of the ring filter borders radially inward on the filtering material; the plate-shaped insert is connected to the tubular frame and the material of the closure is a foamed plastic.

RING FILTER MADE OF STAR-SHAPED FOLDED FILTERING MATERIAL

The invention concerns a ring filter made of star-shaped folded filtering material according to the preamble of patent claim 1.

A ring filter of this type is known from EP 0 498 757 A1.

The invention concerns itself with the problem of designing the closure on the front side in the ring filter according to the preamble, particularly using a foamed, elastic plastic closure material, so it is durable, as well as allowing an economical production of the closure region of this type of filter through an appropriate design of the closure region. In addition, a constructive design is to be provided in the closure region on the front side which ensures a secure and tight attachment of the closure material to the folded filtering material.

This problem is solved by the implementation of a ring filter according to the preamble according to the characterizing features of patent claim 1.

Advisable embodiments are the object of the sub-claims and will be described in more detail with reference to an illustrated exemplary embodiment.

The following particular advantages arise through the solution according to the invention.

Particularly in ring filters having large dimensions, such as in ring filters which are, for example, intended as air filters for commercial vehicles, and in which the closure material consists of a foamed plastic material having elastic properties, not only is expensive plastic material saved by the plate-shaped insert, but the closed ring filter floor can be reliably protected from oscillations of

the floor, which cause unpleasant noises, by the selection of a stiff material for the plate-shaped insert. These types of floor oscillations can, as a rule, not be avoided with a continuous floor made of foamed, elastic plastic material.

The connection of the plate-shaped insert into the closure on the front side of the ring filter element allows an economic production of the filter, because the plate-shaped insert can be inserted together with the ring filter element and the tubular frame present therein into the mold, in which the closure on the front side is molded onto the filtering material, including the tubular frame supporting the material.

If a connection of the plate-shaped insert to the tubular frame is selected in which the plate-shaped insert is fixed axially inside the tubular frame, a particularly durable attachment of the plate-shaped insert in the molded-on closure material is ensured. The connection region is then not subjected to floor oscillations during operation of the filter.

A precise production of the ring filter in regard to its length is allowed by axial fixing of the plate-shaped insert on the tubular frame of the ring filter. More detail is provided on this matter in the description of the exemplary embodiment.

The drawing illustrates an exemplary embodiment.

Fig. 1 shows a ring filter element, partially in a view, partially in a longitudinal section,

Fig. 2 shows a detail II from Fig. 1,

Fig. 3 shows a section along line III-III in Fig. 4 through a plate-shaped insert implemented as a circular disk,

Fig. 4 shows a view of the circular disk in the direction of the arrow IV in Fig. 3,

Fig. 5 shows a view of the circular disk in the direction of the arrow V in Fig. 3.

The ring filter shown in Fig. 1 comprises star-shaped folded filtering material 1, which is supported radially on the inside on a radially permeable tubular frame 2, as well as coverings on its front side. These coverings are, on a front side, a centrally open, ring-shaped closure 3 made of molded-on polyurethane, with the polyurethane enclosing the adjoining end of the tubular frame 2.

The opposite front side of the ring filter is covered with a closed end disk 4. The radial outside of this end disk 4 consists, in the region covering the filtering material 1, of plastic 5 molded on as polyurethane and, molded into the polyurethane in the center, on the radial inside, a circular disk 6 made of another relatively stiff plastic. This plastic can, for example, be recycled material. On the radial outside, the filtering material is covered with a ring-shaped grid 7 which is embedded in the front side plastic closures.

The circular disk shown in detail in Figs. 3 to 5 has axially aligned flexible tongues 8 with barbs 9 molded onto their ends. On the side of the circular disk 6 onto which the flexible tongues 8 are molded, there are axially projecting supports 10 distributed around the circumference. To connect the circular disk 6 with the tubular frame 2, the circular disk 6 having the supports 10 is placed on the tubular frame 2 so it is stopped axially

by the frame and is axially fixed so that it does not move in recesses of the tubular frame 2 via the flexible tongues 8 which elastically engage in the recesses.

The outer diameter of the circular disk 6 is smaller than the inner diameter of the star-shaped folded filtering material 1, which results in a ring gap interval being provided between the edge of the circular disk 6 and the filtering material 1.

A filter according to the invention is preferably produced as follows.

A ring-shaped filter star is produced from filtering material 1, whose outside is coated with a grid 7. The tubular frame 2 is introduced radially into the inside of the filtering material 1. The circular disk 6 is already axially secured in this tubular frame 2 when it is introduced into the ring-shaped filtering material 1.

First, the end disk which remains open in the center is molded onto the ring filter prepared in this way. The material for this end disk is polyurethane, whose liquid starting components are poured into a mold for foaming. The end of the prepared ring filter whose open end disk is to be implemented is placed in this mold. In the mold, into which the components for the polyurethane to be foamed are poured in as liquids, the ring filter is supported exclusively over localized small regions over the front side of the filtering material 1 on supporting elements.

The support in the mold is of a type such that the end disk consisting of polyurethane can be implemented by foaming of the liquid starting components. The tubular frame 2 has, on the end facing this open end disk, a ring shoulder 11 which receives the front side of the filtering material axially, so that in this way the tubular frame 2 assumes a position

exactly defined axially relative to the filtering material 1.

In a subsequent production step, the closed end disk 4 is implemented on the opposite front end of the ring filter, where it is to be affixed. For this purpose, the appropriate front side of the prepared ring filter is placed into a mold, which was previously filled with the starting components for a polyurethane to be foamed. The ring filter is supported in this mold via the axially defined circular disk 6 connected with the tubular frame 2. The support of the circular disk 6 in the casting mold is of a type such that the circular disk 6 can only be embedded and/or enclosed by the foaming polyurethane in an outer radial region. A ring collar 12, which points to the inside of the ring filter and which is formed onto the ring disk 6, ensures that the polyurethane rising from the floor of the casting mold can rise as intended into a ring gap between the circular disk 6 and the filtering material 1.

On the surface of the circular disk 6 which comes to rest axially outward, a peripheral ring groove 13 is provided radially on the outside to achieve a labyrinth seal relative to the polyurethane foam. The supports 10, on which the tubular frame 2 rests axially, ensure radial through openings into which the foaming polyurethane can flow for at least axial contact on the ring collar 12.

Due to the alignment of the prepared ring filter by means of the circular disk 6 in the casting mold for foaming with polyurethane, an absolutely equal installation length of the ring filter can always be achieved, independent of the axial length tolerances of the filtering material.

The circular disk 6 can be provided radially on the outside with radially extending fingers 14 which are affixed as far as possible axially on the surface which comes to rest

axially on the outside in the ring filter. The filtering material 1 can press against these fingers 14 if the closed end disk 4 is molded onto the ring filter before the open end disk. However, these types of fingers 14 have the disadvantage that a circular disk 6 provided with them cannot be introduced together with the tubular frame 2 into the central cavity of the filtering material 1 if it is already connected with the tubular frame.

In order that the tubular frame can be introduced without complications into the central cavity inside the star-shaped folded filtering material 1, the edge of the tubular frame introduced is provided with an introduction bevel around its circumference.

The ring filter described is an air filter having an axial length of 460 mm and an outer diameter of 310 mm for a commercial vehicle. The diameter of the plate-shaped insert, i.e. the circular disk 6, visible from the outside is 170 mm for an actual outer diameter of the circular disk of 185 mm.

CLAIMS

1. Ring filter made of star-shaped folded filtering material and a closure molded onto one of its two front sides as a closed end disk having a plate-shaped insert, which forms a central region of the closure lying radially inside the filtering material, made of a material different from the other closure material, characterized by the features,
 - a radially permeable tubular frame (2), which extends approximately over the entire axial length of the ring filter, adjoins the filtering material (1) radially on the inside,
 - the plate-shaped insert (6) is in contact with the tubular frame (2),
 - the closure material (5) is a foamed plastic.
2. Ring filter according to claim 1, characterized in that the closure material (5) is a polyurethane foam.
3. Ring filter according to claim 1 or 2, characterized in that the plate-shaped insert (6) is interlocked with the tubular frame (2).
4. Ring filter according to one of the preceding claims, characterized in that

the plate-shaped insert (6) is connected with the tubular frame (2) so that it is axially fixed.

5. Ring filter according to one of the preceding claims,

characterized by the features

- the plate-shaped insert (6) is a circular disk having an outer diameter smaller than the inner diameter of the filtering material,
- the radial outside of the plate-shaped insert (6) extends axially into the region of the filtering material (1),
- when it is connected with the tubular frame (2), the axial distance ranges of the plate-shaped insert (6) distributed around the circumference are approximately uniform relative to the tubular frame (2).

6. Ring filter according to one of the preceding claims,

characterized in that

the plate-shaped insert (6) has a ring collar (12) projecting in the direction of the tubular frame (2) radially outward relative to its position to be assumed on the tubular frame (2).

7. Ring filter according to one of the preceding claims,

characterized in that

the plate-shaped insert (6) has radially projecting fingers (14) radially outside for an axial stop on the filtering material (1).

8. Ring filter according to one of the preceding claims,
characterized in that

the fingers (14) are located in the lower floor region and have an extremely small axial dimension relative to the height of the radial outer surface of the plate-shaped insert (6).

9. Ring filter according to one of the preceding claims,
characterized in that

axial supports (10) are provided on the ring collar (12) for an axial stop on the tubular frame (2).

10. Ring filter according to one of the preceding claims,
characterized in that

the plate-shaped insert (6) is provided with radially elastic flexible tongues (8), projecting axially from this insert (6) in the direction of the tubular frame (2), to achieve an interlocking connection with the tubular frame (2), with the flexible tongues being implemented as barbs (9) on their free end for axial fixing on the tubular frame (2).

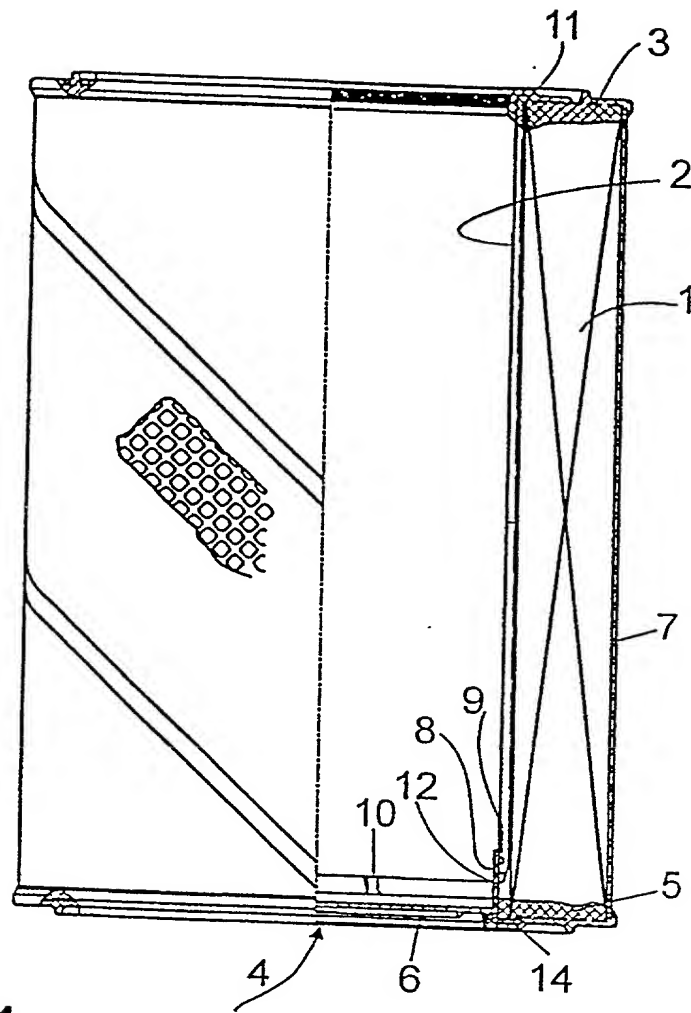


Fig. 1

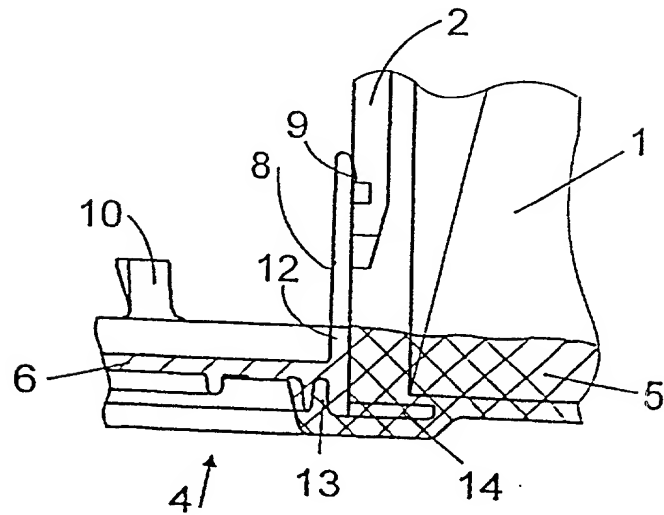


Fig. 2

Fig. 3

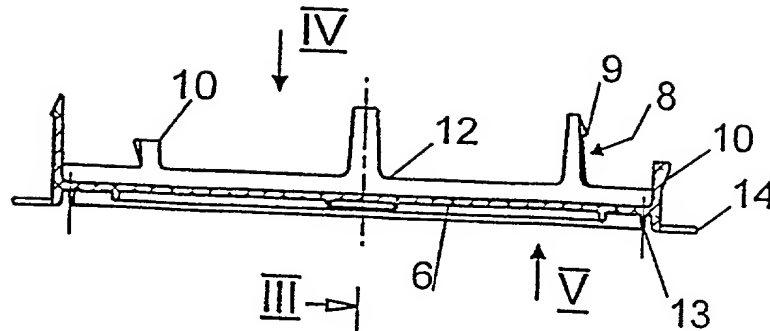


Fig. 4

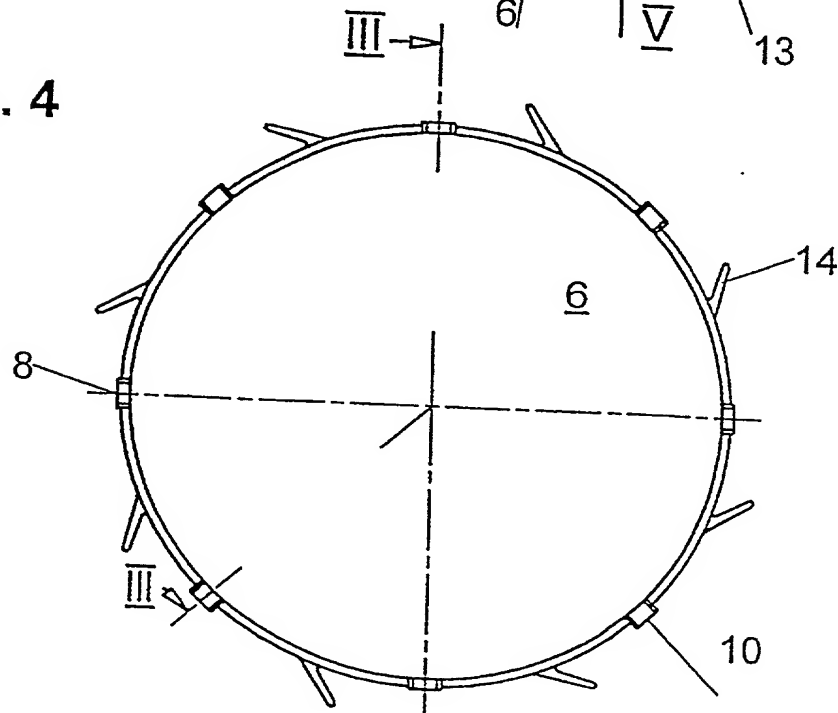
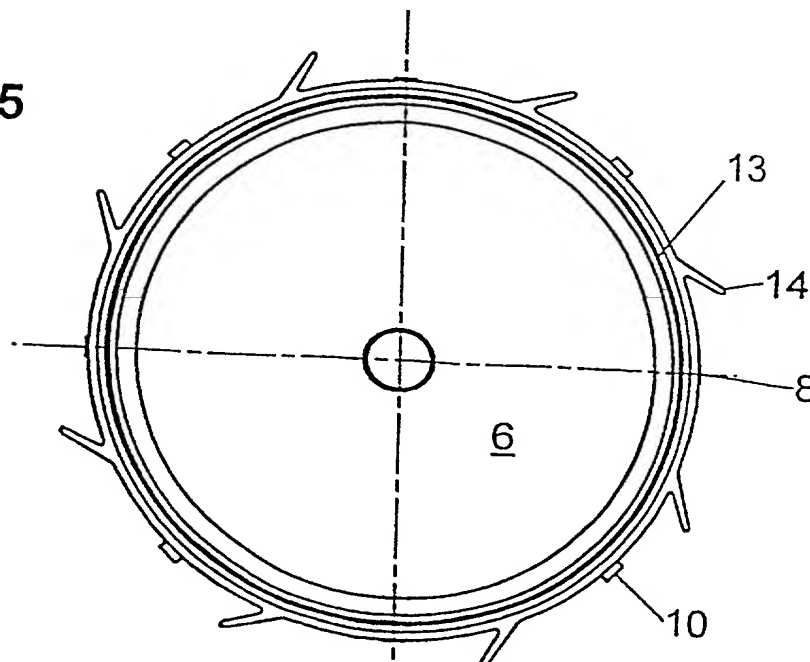


Fig. 5



As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

RING FILTER CONSISTING OF STAR-SHAPED FOLDED FILTERING MATERIAL

the specification of which (check only one item below):

☐ is attached hereto.

☐ was filed as United States application

Serial No. _____

on _____,

and was amended

on _____ (if applicable).

☒ was filed as PCT international application

Number PCT/DE00/01623

on 19 MAY 2000,

and was amended under PCT Article 19

on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

PRIOR FOREIGN/PCT APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:

COUNTRY (if PCT, indicate "PCT")	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 35 U.S.C. 119
GERMANY	199 28 448.2	23 JUNE 1999	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO

COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY
(Includes Reference to PCT International Applications)

ATTORNEY'S DOCKET NUMBER
KOHLER ET AL-1 PCT

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application:

PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. 120:

U.S. APPLICATIONS			STATUS (Check One)		
U.S. APPLICATION NUMBER	U.S. FILING DATE		PATENTED	PENDING	ABANDONED
PCT APPLICATIONS DESIGNATING THE U.S.					
PCT APPLICATION NO.	PCT FILING DATE	U.S. SERIAL NUMBERS ASSIGNED (if any)			

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (List name and registration numbers).

ALLISON C. COLLARD, Registration No. 22,532;

KURT KELMAN, Registration No. 18,628

EDWARD R. FREEDMAN, Registration No. 26,048;

FREDERICK J. DORCHAK, Registration No. 29,298

ELIZABETH COLLARD RICHTER, Registration No. 35,103

WILLIAM C. COLLARD, Registration No. 38,411

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Roslyn, New York 11576

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(name and telephone number)
(516) 365-9802

1	FULL NAME OF INVENTOR	FAMILY NAME <u>KÖHLER</u>	FIRST GIVEN NAME <u>WILHELM</u>	SECOND GIVEN NAME
	RESIDENCE & CITIZENSHIP	CITY <u>STUTTGART</u>	STATE OR FOREIGN COUNTRY <u>GERMANY</u> <u>DEX</u>	COUNTRY OF CITIZENSHIP <u>GERMANY</u>
	POST OFFICE ADDRESS	POST OFFICE ADDRESS <u>FEUERBACHER-TAL-STRASSE 138</u>	CITY <u>D-70469 STUTTGART</u>	STATE & ZIP CODE/COUNTRY <u>GERMANY</u>
2	FULL NAME OF INVENTOR	FAMILY NAME <u>SCHÖNHERR</u>	FIRST GIVEN NAME <u>WILHELM</u>	SECOND GIVEN NAME
	RESIDENCE & CITIZENSHIP	CITY <u>BLEIBURG</u>	STATE OR FOREIGN COUNTRY <u>AUSTRIA</u> <u>ATX</u>	COUNTRY OF CITIZENSHIP <u>AUSTRIA</u>
	POST OFFICE ADDRESS	POST OFFICE ADDRESS <u>WOROUJACK 27</u>	CITY <u>A-9150 BLEIBURG</u>	STATE & ZIP CODE/COUNTRY <u>AUSTRIA</u>
0	FULL NAME OF INVENTOR	FAMILY NAME <u>VORBACH</u>	FIRST GIVEN NAME <u>NORBERT</u>	SECOND GIVEN NAME
	RESIDENCE & CITIZENSHIP	CITY <u>AUENWALD</u>	STATE OR FOREIGN COUNTRY <u>GERMANY</u> <u>DEX</u>	COUNTRY OF CITIZENSHIP <u>GERMANY</u>
	POST OFFICE ADDRESS	POST OFFICE ADDRESS <u>IN DEN DINKELÄCKERN 32</u>	CITY <u>D-71549 AUENWALD</u>	STATE & ZIP CODE/COUNTRY <u>GERMANY</u>

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 201 <i>Wilhelm Köhler</i>	SIGNATURE OF INVENTOR 202 <i>Heinrich Wilhelm</i>	SIGNATURE OF INVENTOR 203 <i>Norbert Vorbach</i>
DATE <u>15.11.2001</u>	DATE <u>15.11.2001</u>	DATE <u>15.11.2001</u>